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NEW SPECIES OF VITRINELLIDAE FROM GULF OF MEXICO AND ADJACENT WATERS¹

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Abstract

The systematics of the families Vitrinellidae and Tornidae are briefly reviewed and reasons given for maintaining the two families as separate entities. Three new species of Vitrinellidae from the Gulf of Mexico are described, *Macromphalina floridana*, *Vitrinella texana*, and *Solariorbis semipunctus*.

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The family Vitrinellidae is fairly large with about 220 described recent species from the Western Hemisphere, and with probably as many or more from the Indo-Pacific region. The western Atlantic species number over 60, but many are poorly known or have not been seen since their description. The writer, while working on the vitrinellid fauna of South Florida and the Gulf of Mexico, found 3 species that had evidently been missed by previous workers on these minute mollusks. They are described below along with a brief discussion of the systematics of the family.

Early workers placed vitrinellids in *Rotella*, *Umbonium*, or other small trochid genera. Fischer (1857) described several new species as *Adeorbis-Tornus*, while many authors placed species in *Cyclostrema*. Katherine Bush (1897) was the first to point out that *Vitrinella* and its allies should be placed in a separate family, but she, unfortunately, did not have a clear understanding of the affinities of the group. She clearly thought that they were related to the Trochidae, and included a number of genera which are certainly not vitrinellids. It was Pilsbry and McGinty (1945) who first showed figures of living vitrinellids, and Pilsbry later (1953) placed the family in the Rissoacea.

Abbott (1950) showed that *Cyclostrema* is a genus closely

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allied to *Liotia*, and placed the genus in the Liotiidae. Thus *Cyclostrema* is shown to be quite different from the vitrinellids, and the family name Cyclostrematidae is synonymous with Liotiidae. Many of the species formerly grouped under Cyclostrematidae should go into Skeneidae, or if mesogastropods, into some other family. Malacologists have often equated the Vitrinellidae with the Adeorbidae-Tornidae, and the most recent such classification is that of Taylor and Sohl (1962). They state that the name Vitrinellidae should be used in preference to Tornidae on the grounds that the former name has been used more often. However, nearly everyone has ignored the anatomical work of Woodward (1899) on *Tornus subcarinatus* (Montagu), the type species of *Tornus*, and the work of Fretter (1956) on a vitrinellid, *Circulus striatus* (Philippi). In addition, Pilsbry and McGinty (1945) gave information on the external morphology of vitrinellids, including *Vitrinella helicoidea* C. B. Adams, the type species of *Vitrinella*. Moore (1962) provided a more precise illustration and description of the external morphology of the vitrinellid, *Parviturboides interruptus* (C. B. Adams).

When the vitrinellids are compared with *Tornus subcarinatus*, the following important differences are noted: 1.) The vitrinellids have a circular, multispiral operculum; *Tornus* has a paucispiral oval operculum. 2.) The vitrinellids have a penis in the male; this organ is lacking in *Tornus*. 3.) The gill is deep in the mantle cavity of vitrinellids; it extends well out of the right side of the aperture in *Tornus* and may even curve around the margin of the shell. Fretter (1956) cites further important differences in the internal anatomy. There are similarities in the appearance of the shell, in features of the radula, and both possess a pair of pallial tentacles on the right side of the mantle. However, while relationship is apparent, the differences are too great to put *Tornus* in the same family with the vitrinellids.

In view of the above observations, the writer feels that attempts to equate the Vitrinellidae with the Tornidae are based on misconceptions, and that both families should take their place in the superfamily Rissoacea.

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Steger, and Barry and Buena Valentine. The specimen of *Macromphalina floridana* from Soldier Key was collected as part of a qualitative sample in the sea grass *Thalassia testudinum* under National Science Foundation grant no. G-14521. The study was completed under National Science Foundation grant no. GP-2455.

MACROMPHALINA FLORIDANA, sp. nov.

Pl. 7, figs. 1-3

Description. The shell is depressed, with a tilted, slightly projecting protoconch. The umbilicus is widely open, periphery strongly carinate, and the aperture strongly oblique.

The protoconch consists of approximately $1\frac{1}{2}$ smooth glassy whorls. It terminates with a barely discernible varix, and the sculpture of the teleoconch begins immediately after. The teleoconch consists of nearly two whorls in the holotype, and is covered, both top and bottom, with sculpture of narrow, recurved radial ribs. Between the ribs there is a microsculpture of close set spiral threads. The radial ribs above the periphery are opisthocline, while those below are prosocline. They are not continuous, however, for the ribs are slightly more numerous on the upper half of the shell. There were 46 counted on the dorsal half, 34 on the lower half of the body whorl of the holotype.

The aperture is oblique, and viewed from below, is broadly ovate. The upper part of the peristome overhangs the aperture considerably. The peristome is continuous, and in the holotype, is slightly separated from the preceding whorl. The peristome is closely appressed to the preceding whorl in the paratype from Soldier Key, but this specimen is evidently not quite mature. The umbilicus is widely open, and the sculpture continues on the inner surface up to the preceding whorl.

Material. Holotype. Madeira Beach at 150 Avenue, St. Petersburg, Florida, collected by Mrs. Edna Marcott during the winter of 1959; diameter, 3.1 mm., altitude, 1.5 mm. Deposited in the Division of Mollusks, U. S. National Museum, no. 636310. Paratypes. 1 specimen from the east side of Soldier Key, Biscayne Bay, Florida, in a depth of about 1 meter, November 2, 1961, collected by D. R. Moore; diameter, 1.9 mm., altitude, 1.0 mm., UMML no. 30:2773. 1 specimen from Madeira Beach at 150 Avenue, St. Petersburg, Florida, collector, D. Steger; diameter, 1.0 mm., altitude, 0.5 mm. Academy of Natural Sciences of Philadelphia no. 295621. This specimen was considerably larger, but most of the

second adult whorl has been broken away.

Name derived from Florida, the state where all the material was collected.

Remarks. *Macromphalina floridana* is strongly carinate; the other two West Indian species have a rounded periphery. *M. caro* (Dall) is much more elevated, but *M. palmalitoris* Pilsbry and McGinty is similar to *M. floridana* in size and shape. There are other differences between *M. floridana* and *M. palmalitoris*, however, for *M. floridana* has a tilted protoconch and discontinuous axial ribs, while *M. palmalitoris* has an erect protoconch and continuous axial ribs. The axial sculpture of *M. floridana* is also much stronger.

M. dipsycha Pilsbry and Olsson appears to be the Panamic analog of *M. floridana*. *M. pilsbryi* Olsson and McGinty is *Vanikoro oxychone* Mörch (personal communication, Robert Robertson), and thus is not considered in the discussion of comparative characters of the West Indian species.

VITRINELLA TEXANA, sp. nov.

Pl. 7, figs. 4-6

Description. The shell is depressed, and has a flattened apex. The umbilicus is narrow but deep, and is almost flat sided. Sides of the shell curve out and down gently so that the periphery forms an angle with the base of the shell. The aperture is oblique.

The protoconch consists of $1\frac{3}{4}$ glassy whorls. The teleoconch consists of about $1\frac{1}{4}$ whorls, and is sculptured on the upper side with fine spiral grooves and on the lower side with numerous short radiating riblets. These riblets are crossed by a few weak spiral grooves, and there are several stronger spiral grooves in the umbilicus. The ventral side is flattened, and, in the holotype, bears about 36 radiating riblets. The riblets become indistinct on the last half of the whorl, and become difficult to count.

The aperture is oblique, and is broadly ovate. The peristome is deeply notched at the upper inner angle. The parietal wall is rather thick, and is extended a little forward of the aperture. The umbilicus is narrow and almost flat sided, but there is no angle with the base of the shell. The shell itself is quite thin and fragile, and only the holotype and one immature paratype are unbroken. One paratype is actually only half of the body whorl of a broken shell.

Material. Holotype. Mustang Island, near Port Aransas, Texas, February 14, 1960, collector, Winnie Rice; diameter, 1.72 mm.,

altitude, 0.78 mm. Deposited in the Division of Mollusks, U. S. National Museum, no. 636311. Paratypes. All collected by Winnie Rice on Mustang Island, Texas, near Port Aransas. 2 specimens from Cline's Point, Port Aransas, August 24, 1959; both are broken and have lost part of the body whorl. Institute of Marine Science, U. of Texas, no. 1015. 1 specimen from drift near the ferry landing, Port Aransas, September 2, 1959; this is a fragment consisting of about one half of the body whorl. Institute of Marine Science, U. of Texas, no. 1016. 1 specimen from Port Aransas, October 21, 1959; this is worn and broken. UMML no. 30:2775. 1 specimen from Port Aransas, October 26, 1959; this specimen has the upper part of the peristome broken away, and a piece is broken out of the body whorl close to the aperture — diameter, 1.9 mm., altitude, 0.8 mm. UMML no. 30:2776. 3 specimens from Mustang Island, February 14, 1960; 2 specimens are quite worn and broken, but one is quite fresh. The shell is glassy and unbroken except for a few nicks in the peristome. However, it is immature, and has the following measurements: diameter, 1.2 mm., altitude, 0.55 mm. One specimen Academy of Natural Sciences of Philadelphia no. 295622; 2 specimens Division of Mollusks, U. S. National Museum no. 636312.

Name derived from the state of Texas.

Remarks. The genus *Vitrinella* is as yet in a confused state, and it is not practical to attempt to enumerate all the species of the West Indian region at this time. However, no species of *Vitrinella* have as yet been reported from the Texas coast. Three species found in Texas waters are *V. helicoidea* C. B. Adams, *V. thomasi* (Pilsbry), and *V. floridana* Pilsbry and McGinty. None of these has the periphery at the base of the shell, nor do any have radiating riblets on the ventral side. Thus *V. texana* is quite distinct from other species of *Vitrinella* found on the coast of Texas.

SOLARIORBIS SEMIPUNCTUS, sp. nov. Plate 8, upper figs. 1-3

Description. The shell is strongly depressed, and has a flattened upper surface. The umbilicus is narrow, and partly concealed by a thickening of the body whorl around the umbilicus.

The protoconch apparently consists of $1\frac{1}{2}$ whorls, but this could not be determined with any degree of certainty. There are 3 whorls in all, covered, in the adult portion, with many spiral ridges. Between the ridges are somewhat narrower grooves. These

grooves are simple on the upper side but become punctate on the periphery and on the lower surface. The aperture is oblique, ovate, and with a rather heavy parietal callus. There is a notch in the upper inner angle of the aperture. The umbilicus is quite narrow, but deep. The thickening of the inner portion of the body whorl begins about half a whorl from the aperture. It may cover the umbilicus completely, or leave a small opening.

Material. Holotype. From northwest Campeche Bank, Mexico, 18 meters, mud bottom, collector, Dan Steger; diameter, 0.93 mm., altitude, 0.4 mm. Deposited in the Division of Mollusks, U. S. National Museum no. 636309. Paratype. 1 specimen from beach drift, Baie de Aquin, Haiti, 1956, collectors, Barry and Buena Valentine; diameter, 0.9 mm., altitude, 0.38 mm. UMML no. 30:2774.

Name. The name *semipunctus* is derived from the Latin, *semis*, a half, and *punctum*², a small hole, and refers to the series of small pits on the lower half of the shell.

Remarks. There are about 11 recent species of *Solariorbis* previously described from the West Indian region. *S. semipunctus* is smaller than any of the other known species, and is the only one with punctate sculpture on the lower half of the shell. *S. blakei* (Rehder) appears to be the most closely related species. It is only slightly larger than *S. semipunctus*, and may, in some specimens, also cover the umbilicus with an unusual development of the last whorl. *S. blakei*, however, does not have a flat upper surface, nor does it have the sculpture found in *S. semipunctus*.

Of the two specimens, the paratype from Haiti appears to be the more recently dead. The sculpture is beach worn, however, and not nearly so distinct as that found on the holotype. Little can be said about the distribution of the species except that the distance between the two localities leads one to believe that it must be widespread in the West Indies and adjacent continental coast.

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² Actually the adjective *punctus*, pricked (punctate).—Ed.

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A NEW THYASIRA (PELECYPODA) FROM THE ROSS SEA, ANTARCTICA

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Thyasiridae: *Thyasira* Lamarck, 1818

Type-species. (monotypy) *Tellina flexuosa* Montagu, 1803.

THYASIRA DEARBORNI Nicol, new species. Plate 8, lower figs. 1-2

Type repository — Division of Mollusks, U. S. National Museum. Holotype cat. no. 653099; paratypes cat. nos. 612770 and 635392.

Description—Shell thin, small, porcellanous, somewhat chalky; color varying from white to pale yellow; periostracum thin, yellow; a ferruginous, buff coating present at the anterior and posterior ends of the shell; equivalved; without a gape; anterior and ventral borders arcuate, postero-ventral area indented in the region of the constriction, remainder of posterior border gently rounded, dorsal border short and sloping both anteriorly and posteriorly; posterior one-eighth of the shell strongly constricted or flattened; holotype 4.8 mm. high and long, one paratype 4.9 mm. high and long, the other paratype 5.0 mm. high and 4.9 mm. long; no prodissoconch; beaks prosogyrate, contiguous; surface ornamentation consists of numerous concentric lines; interior margins of shell smooth; adductor muscle scars and pallial line not seen; ligament external, opisthodetic; hinge edentulous and hinge plate absent.